

13

14.

28. (New) Apparatus according to claim ~~27~~¹³, wherein said next to last time slot of the current frame is the second type of time slot, said last time slot is the first type of time slot, and said guard period is provided at the end of said next to last time slot.

REMARKS

Favorable reconsideration of the application is respectfully requested in light of the amendments and remarks herein.

Claims 1-14 were pending in this application. By the present Amendment, these claims are canceled in favor of new Claims 15-28. In addition, the specification is amended as requested by the Examiner.

The Applicant thanks the Examiner for the courtesies extended to Applicant's undersigned representative during the telephone interview of May 24, 2002. During the interview, the concepts of the invention of, e.g., Claim 15 presented herein were discussed vis-à-vis the prior art. It was explained that with the invention of Claim 15, a determination is made, based on an amount of information to be transferred, whether at least one time slot following the second time slot of a current frame should be allocated as the first type of time slot. If so, the method always allocates the last time slot of the current frame as the first type of time slot. As a result, the last time slot of the current frame and the first time slot of a succeeding frame are the same type of time slots. A similar allocation is made with respect to the third time slot.

Advantageously, with this approach, the amount of switching between transmitting and receiving modes is reduced as compared to prior art techniques.

Claims 1-4 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,016,311 ("Gilbert"). Claim 5 was rejected under §103(a) over Gilbert in view of the Shepherd patent. Claims 6-7 were rejected under §103(a) over Gilbert in view of the Fujiwara patent. Applicant respectfully submits that all claims presented herein are patentably distinguishable over the prior art of record for at least the following reasons:

New independent Claim 15 claims a method of allocating time slots in a time division duplex communication system, in which information is transmitted and received in predetermined time frames each having a predetermined number of time slots. First and second types of time slots selected from receiving and transmitting type time slots are allocated. The first time slot of each frame is allocated as the first type of time slot, and the second time slot of each frame is allocated as the second type of time slot.

Contrary to Claim 15, the applied portions of Gilbert do not disclose or suggest the following:

"determining, based on an amount of information to be transferred, whether at least one time slot following the second time slot of a current frame should be allocated as the first type of time slot, and if so, always allocating the last time slot of the current frame as the first type of time slot, whereby the last time slot of the current frame and the first time slot of a succeeding frame are the same type of time slots; and

allocating time slots following the second time slot of the current frame as additional receiving or transmitting time slots dependent on an amount of information to be transmitted and/or received, wherein if additional time slot(s) are allocated for the second type of time slot, always allocating at least the third time slot of the current frame as an additional second type time slot."

It is submitted that the concept of always allocating the last time slot of the current frame as the first type of time slot (whenever it is determined that at least one time slot following the second time slot of a current frame should be allocated as the first type of time slot) whereby the last time slot of the current frame and the first time slot of a succeeding frame are the same type

of time slots, is derived only from Applicant's disclosure. Likewise, the concept of always allocating the third time slot of the current frame as a second type of time slot whenever at least one additional time slot is to be allocated for the second type of slot, is also derived solely from the Applicant's disclosure. The applied portions of Gilbert do not suggest these concepts in any way. Advantageously, with the present invention of Claim 15, by always allocating the last time slot as the same type as the first time slot in the succeeding frame under the condition claimed (and allocating the third time slot to the second type under the condition claimed) the amount of switching between receiving and transmitting modes of operation is reduced or minimized. This advantage is not realized by the approaches taken in the Gilbert reference.

The Shepherd and Fujiwara references were cited for disclosing specific features of certain dependent claims. Neither one of these references cures the deficiencies of Gilbert with respect to Claims 15 and 22.

Accordingly, in light of the above distinctions, the invention of independent Claim 15 (and analogous apparatus Claim 22) is not rendered obvious by the prior art of record.

Claims 16-21 and 23-28 are patentable over Gilbert, Shepherd and Fujiwara based at least upon their respective dependencies from Claims 15 or 22.

Conclusion

In light of the foregoing, entry of this amendment, and the allowance of this application with Claims 15-28 are respectfully solicited.

The above statements concerning the disclosures in the cited references represent the present opinion of Applicant's representative and, in the event that the Examiner disagrees, Applicant's representative respectfully requests the Examiner specifically indicate those portions of the reference providing the basis for a contrary view.




It is submitted that the claims originally presented in this application are patentably distinct over the prior art cited by the examiner, and that these claims were in full compliance with the requirements of 35 U.S.C. 112. The replacement of these claims with new claims, as presented herein, is not made for the purpose of patentability within the meaning of 35 U.S.C. §§101, 102, 103 or 112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicant is entitled.

In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicant's representative at the telephone number written below.

Attached hereto is a marked-up version of the changes made to the specification by the current amendment. The attached page is captioned **"Version With Markings to Show Changes Made."**

Respectfully submitted,
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

The specification has been amended as follows:

The paragraph bridging pages 2 and 3 has been amended as follows:

--[According to claim 1, the] The present invention relates to a method for allocating time slots in a time division duplex communication system, in which the information is transmitted in predetermined time frames having a predetermined number of time slots. In a GSM-system, the number of time slots per time frame is 8. Each time frame comprises a fixed block of one receiving time slot and one transmitting time slot being adjacent to each other. [In case that] For the case where the method according to the present invention is implemented in a communication unit as e.g. a mobile station, the receiving time slot is a downlink time slot and the transmitting time slot is an uplink time slot. The method for allocating time slots according to the present invention comprises the step of allocating at least the time slot adjacent to the receiving time slot as additional receiving time slot and at least the time slot adjacent to the transmitting time slot as additional transmitting time slot dependent on an amount of information to be transferred. Thus, starting from the fixed block consisting of the receiving and the transmitting time slot, the time slots for receiving and transmitting are extended, whereby additional receiving time slots are added on the side of the receiving time slot of the fixed block and additional transmitting time slots are added on the side of the transmitting time slot of the fixed block. Thereby, the additional time slots can be added or additionally allocated crossing the border of two adjacent time frames. In other words, the additional time slots can be extended from one time frame into an adjacent time frame.--



The paragraph beginning on line 20 of page 3 has been amended as follows:

--Advantageously, the number of additional receiving time slots and the number of additional transmitting time slots are independent from each other. This means, that data or information can be transferred [asymmetrically] asymmetrically between two communication units. The receiving and the transmitting time slot of the fixed block can be allocated to a common first communication unit, e.g. a mobile station, whereby the transmitting time slot [precedes the] precedes or is earlier than the receiving time slot. In other words, the transmitting time slot is positioned in front of the receiving time slot on the time axis, so that problems in view of the timing advance can be provided. The timing advance means, that the base station has to receive an uplink time slot at a correct timing. To meet this requirement, the transmission timing of the uplink time slot is adjusted e.g. by a mobile station taking the propagation delay into consideration. Of course, the propagation delay is more important in outdoor environments, in which communication units as e.g. mobile stations are sometimes moved with high speed or in which multipath effects occur. The adjustment of the transmission timing of the uplink time slot is called timing advance. Here, [is] the method of the present invention is implemented in a mobile station and if the transmitting time slot is earlier than the receiving time slot, the transmission timing of the uplink time slot transmitted from the mobile station to the station is not necessary, since the timing advance does not play a role in this case.--